REMARKS

This Amendment is responsive to the Final Office Action dated July 10, 2008, accompanies a Request for Continued Examination, and constitutes the required submission. Applicant has amended claims 17, 36, and 39. Applicant previously cancelled claims 1–16, 20–35, and 38. Applicant has also added new claims 45–46. As a result, claims 17–19, 36–37, and 39–46 are pending upon entry of this Amendment.

Claim Rejection Under 35 U.S.C. § 102

In the Final Office Action, the Examiner rejected claims 17–19, 36–37, and 39–44 under 35 U.S.C. 102(b) as being anticipated by Sandmore et al. (U.S. Patent No. 6,059,760, hereinafter referred to as "Sandmore"). Applicant respectfully traverses the rejection to the extent such rejection may be considered applicable to the amended claims. Sandmore fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(b), and provides no teaching that would have suggested the desirability of modification to include such features.

Applicant has amended each of independent claims 17 and 36. As now amended, each of these independent claims require, on a sidewall of a catheter or catheter assembly, a plurality of openings, at least one of which is angled towards a proximal end of a tubular structure or catheter assembly. These amended claims also require an elastic restrictor, such that forces resulting from fluid flow out of the openings and out of said elastic restrictor are substantially balanced in both axial and radial directions. Sandmore fails to disclose or suggest each of these claim elements.

Applicant first notes that fluid outlets 100 disclosed in Sandmore (and as shown in FIGS. 13–14, for example) are located on a sidewall 102 of the cannula tip 45'. This location is distinct from that of the elastic restrictor recited in amended claims 17 and 36, which is located on an end of a tip section. Applicant further notes that the only opening on an end 104 of cannula tip 45' in Sandmore is tiny aperture 132, shown in FIGS. 13–14. However, Sandmore states that the end 104 is a substantially closed distal end 104 that prevents fluid from exiting therethrough.[1] Tiny aperture 132 is only provided to prevent air from becoming entrapped in the distal end of cannula tip 45'.[2]

[1] Col. 8, lines 33–37 of Sandmore.
[2] Id. See also FIG. 14 of Sandmore.

Sandmore fails to disclose or suggest a catheter or catheter assembly having, on a sidewall, one or more openings arranged such that forces resulting from fluid flow out of the openings and out of said elastic restrictor are substantially balanced in both axial and radial directions, as required by claims 17 and 36, as amended. Columns 8–9 of Sandmore make it clear that substantially closed end 104 of the cannula tip 45', which includes tiny aperture 132, prevents fluid from exiting therethrough. Tiny aperture 132 is included only to prevent air from becoming entrapped in the distal end of cannula tip 45'. Therefore, only fluid outlets 100 of Sandmore are capable of allowing fluid to exit therethrough. Fluid outlets 100 extend toward the proximal end 116 and reverse the flow of fluid exiting from the cannula tip 45'.[3]

Therefore, because fluid exits only out of fluid outlets 100 in Sandmore, and is not capable of exiting out of tiny aperture 132, Applicant submits that the forces resulting from fluid flow out of fluid outlets 100 and tiny aperture 132 **cannot** be substantially balanced **in both axial and radial directions.** In other words, forces resulting from fluid flow out of these outlets 100 and tiny aperture 132 cannot be substantially balanced in both axial and radial directions, because **no** fluid exits out of tiny aperture 132. As a result, there does not exist any forward force component (in an axial direction) from fluid flow out of tiny aperture 132 to counterbalance the rearward force components resulting from reversed fluid flow out of fluid outlets 100. Thus, forces resulting from fluid flow in Sandmore cannot possibly be substantially balanced in an axial direction, let alone in both axial and radial directions. For at least these reasons, Sandmore fails to disclose or suggest each and every element of amended claims 17 and 36.

Claims 18–19, 37, and 39–44 depend, either directly or indirectly, on either claim 17 or 36. For at least the reasons outlined above, Applicant submits that Sandmore also fails to disclose or suggest each and every element of these dependent claims.

Thus, Sandmore fails to disclose each and every element set forth in claims 17–19, 36–37, and 39–44. For at least these reasons, Sandmore fails to establish a prima facie case for anticipation of these claims under 35 U.S.C. 102(b). Withdrawal of this rejection is therefore respectfully requested.

[3] Col. 8, lines 11-13 of Sandmore.

Claim Rejection Under 35 U.S.C. § 103

In the Final Office Action, the Examiner rejected claims 17–19, 36–37, and 39–44 under 35 U.S.C. 103(a) as obvious over Sandmore. The Examiner also rejected claims 17–19, 36–37, and 39–44 under 35 U.S.C. 103(a) as being unpatentable over Sandmore in view of Jones et al. (US 5,843,050, hereinafter referred to as "Jones"). Applicant respectfully traverses these rejections to the extent they may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions.

As outlined above, independent claims 17 and 36, as now amended, require, on a sidewall of a catheter or catheter assembly, a plurality of openings, at least one of which is angled towards a proximal end of a tubular structure or catheter assembly. These amended claims also require an elastic restrictor, such that forces resulting from fluid flow out of the openings and out of said elastic restrictor are substantially balanced in both axial and radial directions. As also outlined above, Applicant submits that Sandmore fails to disclose or suggest each and every one of these elements.

Applicant further submits that Jones fails to overcome the shortcomings of Sandmore. In the Office Action, the Examiner referred to Figures 5 and 7, along with lines 14-63 of column 11, of Jones. These portions of Jones disclose an aperture 88 on a distal segment 72. Aperture 88 accommodates a guidewire to pass therethrough.[4] While aperture 88 may permit the escape of pressurized media, such as contrast media or medication, only a relatively small volume of fluid may flow through aperture 88 in order to prevent stagnation in the vessel at the distal end of the catheter.[5] Most of the fluid exiting distal segment 72 flows out of a plurality of lateral apertures 74.[6] Applicant submits that forces resulting from fluid flow out of these lateral apertures 74 and out of aperture 88 cannot be substantially balanced in both axial and radial directions.

Firstly, the majority of the fluid flows out of apertures 74, while only a minimal amount may exit aperture 88. In addition, it appears from the disclosure of Jones that fluid exits out of

[4] Col. 11, lines 45-51 of Jones.
[5] See col. 10, lines 60-64 and col. 11, lines 21-22 of Jones.
[6] See, e.g., FIG. 5 of Jones.

lateral apertures 74 in directions substantially **perpendicular** to the direction of flow of the small volume of fluid that may flow out of aperture 88. In this case, it would not be possible for the forces resulting from fluid flow out of the lateral apertures 74 and aperture 88 to be substantially balanced in both axial and radial directions, because there are no rearward force components (in an axial direction) resulting from the fluid flow out of lateral apertures 74 to counterbalance any forward force component that results from fluid out of aperture 88. Thus, forces resulting from fluid flow in Jones cannot possibly be substantially balanced in an axial direction, let alone in both axial and radial directions. For at least these reasons, Jones also fails to disclose or suggest each and every element of amended claims 17 and 36.

Claims 18–19, 37, and 39–44 depend, either directly or indirectly, on either claim 17 or 36. For at least the reasons outlined above, Applicant submits that neither Sandmore nor Jones, alone or in combination, discloses or suggests each and every element of these dependent claims.

Therefore, for at least these reasons, Applicant respectfully submits that the applied references fail to establish a prima facie case for the un-patentability of Applicant's claims 17–19, 36–37, and 39–44 under 35 U.S.C. 103(a). Withdrawal of the rejections to these claims is therefore respectfully requested.

New Claims

Applicant has added claims 45–46 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicant's new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions. As outlined above, the applied references fail to disclose or suggest a catheter having a plurality of openings and an elastic restrictor, such that forces resulting from fluid flow out of the openings and out of the elastic restrictor are substantially balanced in both axial and radial directions. The applied references also fail to disclose or suggest that forces resulting from fluid flow out of the openings and out of the elastic restrictor result in a substantially net fluid force of zero. No new matter has been introduced by claims 45–46.

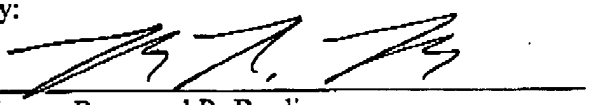
CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

October 10, 2008

By:



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